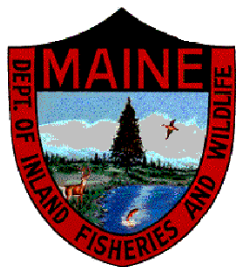


**** Sebago Region Fisheries Newsletter****



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Current and past editions of our newsletter, as well as pictures of fish caught in the region may be viewed on the Department's home page (www.MEFISHWILDLIFE.com)

Feature Article - Rainbow Trout Project Update....

In the fall of 1997, the Fishery Division established a committee comprised of biologists and hatchery staff to revisit the prospect of a rainbow trout stocking program. After deliberation of the pros and cons, the committee concluded to move forward with a limited, experimental program to evaluate the relative performance of rainbow trout against brown trout and brook trout. While some people contend rainbows would provide angling diversity, our intentions were to determine if rainbows could provide fishery managers with an additional tool to improve fishing opportunities for Maine anglers. The study was conducted over a 5-6 year period in a variety of Maine waters and included three parts: (1) hatchery performance comparisons among all three species, (2) field performance comparisons of browns and rainbows, and (3) field performance comparisons of brookies and rainbows. A federal hatchery in Tennessee provided Eagle Lake Strain rainbow eggs used during the study.

The study is finally winding down, draft reports for parts one and two are essentially completed, and data collection efforts for the brook and rainbow trout field comparisons were recently finished this fall. All 3 final reports will likely be available in 2007. The remainder of this article focuses on field comparisons between brown trout and rainbow trout, as well as an update on where the rainbow program is likely headed.

Beginning in 2001, five lakes and two rivers were stocked annually with equal numbers of rainbow trout and brown trout. Our objectives were: (1) to examine and compare catch rates, returns, growth, and carry-over potential of rainbow and brown trout; and (2) to evaluate whether rainbows may be more catchable than browns during mid-day hours, and thus more available to the majority of anglers.

Catch rates...On average across all study lakes, it took winter anglers 6 times longer to catch a legal brown trout than a legal rainbow trout. Similarly, open water anglers fished 4.7 times longer to catch a legal brown trout than a legal rainbow trout. The bottom line, anglers caught approximately 5 rainbows to every brown trout! Although



rainbows also exhibited better catch rates than browns on rivers, the differences (1.5-1.9 fold) between the two species were much closer than those observed on lakes.

Returns...On average, lake anglers caught 101.4 % of the stocked rainbows and 21.8% of the stocked browns during a full fishing season (summer and winter). Amazingly, anglers managed to catch over 100% of all the 'bows stocked! Theoretically this should not be possible, but catch and release creates recycling of the same fish. The Kennebec River had return rates of 81.1% for rainbows versus 50.0% for browns. Although the Little Androscoggin River exhibited a similar difference in returns between the two species, the actual percent returns were substantially lower than those observed on the Kennebec River (Figure1).

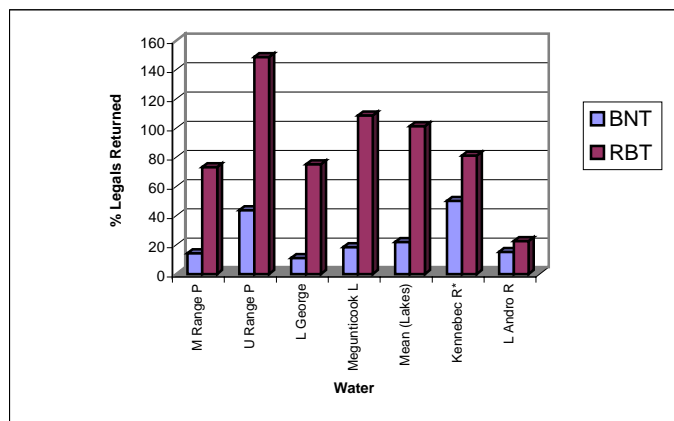


Figure 1. % Legals Returned by Water and Species, 2002-2005.

Age and Growth...Both rainbows and browns are capable of providing a quality-sized trout fishery in lakes and larger river systems (Table 1). However, the data also suggests Eagle Lake rainbows will generally produce few fish in excess of 4 pounds in Maine waters. This is due to higher catch and

harvest rates on rainbows, as well as feeding behaviors that will be discussed in more detail below.

| Water(s) | Species | Length (in) | Weight (lbs) | K-Factor |
|-----------------|----------------|--------------------|---------------------|-----------------|
| All Lakes | RBT | 16.7 | 1.8 | 0.98 |
| | BNT | 16.3 | 1.9 | 1.06 |
| Kennebec River | RBT | 15.8 | 1.5 | 1.04 |
| | BNT | 14.7 | 1.1 | 1.08 |
| L. Andro River | RBT | 11.9 | 0.6 | 0.98 |
| | BNT | 11.0 | 0.5 | 1.05 |

As expected, younger aged rainbows (2-3 years old) dominated the lake fisheries. Despite their higher catch rates, rainbow trout still demonstrated an ability to survive up to age four in four of the five study lakes, and up to age five in two of the five waters. The Kennebec River sample was comprised of rainbows up to three years of age. No holdover rainbows were sampled on the Little Androscoggin River, but several two year-olds were reported by anglers and documented with photographs.

Overall, rainbows grew at a better rate (0.34 inches/month) than brown trout (0.24 inches/month) on lakes. Interestingly, initial rainbow trout growth is strong and drops off dramatically, whereas browns showed higher and more steady rates of growth by age III (Figure 2).

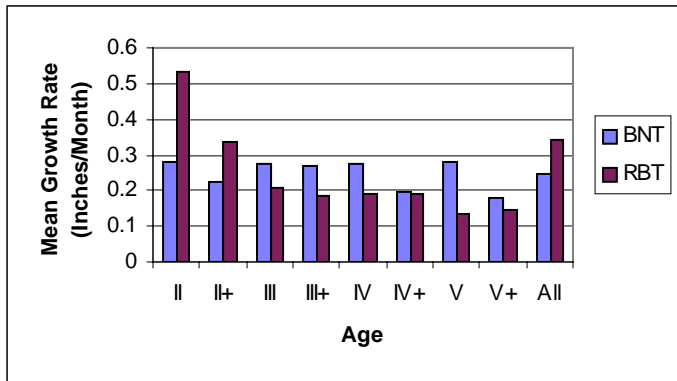


Figure 2. Mean growth rate (inches/month) from size at stocking for all lakes by age class, 2002-2005.

These growth rate observations are presumably related to dietary preferences of the two species. Limited field observations of stomachs suggest fall yearling brown trout become at least partially piscivorous (fish eating) almost immediately, whereas Eagle Lake strain rainbows appear reluctant to switch over to fish. Younger, smaller rainbows (16-17 inches or less) exhibit excellent growth while feeding on zooplankton, aquatic invertebrates, and mollusks. However, as they increase in size, small prey items may not meet their energetic and metabolic needs, which results in a precipitous decline in growth rates after age III. In contrast, brown trout at least partially feed on forage fish from the onset, and they eventually surpass rainbows in both length and weight, and exhibit higher growth rates than rainbows at older ages.

Mid-day Catchability... Although a high percentage of anglers fish entirely or partially during mid-day hours, there was no statistically significant difference in the percentage of rainbows versus browns caught during mid-day hours. On the other hand, data from this study confirms popular fishing

knowledge; a higher percentage of both species were caught during the morning and evening time period when trout tend to be more active.

Conclusions... Our initial and most important reason for investigating rainbow trout performance was to explore their potential for improving angling opportunities. The differences in catch rates and returns between the two species were substantial. On waters currently managed for brown trout, the addition and/or replacement with rainbow trout stocking programs would likely improve angling success for coldwater sportfish in Maine.

As anticipated, overall growth was similar between the two species and both have the potential of producing quality trout fisheries in Maine waters. However, brown trout are more likely to produce trophy-sized fish due to their better growth at older ages and lower catchability. Combination stockings of both species would provide the best angling opportunities; rainbows would provide better action and browns would yield a limited number of trophy fish each season.

Although the apparent lack of fish in the diet of the Eagle Lake Strain rainbow trout and its associated growth implications could be viewed negatively, there may be several benefits. Many lakes in Maine currently lack abundant forage populations, particularly rainbow smelt. Eagle Lake rainbows do not appear to be dependant upon smelt or any other forage fish to produce a quality salmonid fishery. As such, they are not expected to significantly impact forage fish populations experiencing low abundance, and they are less likely to compete with other piscivorous species. In addition, this rainbow trout strain appears to utilize lower levels of the food chain in lake systems, where food resources would tend to be less limiting. As a result, rainbow trout could possibly be stocked at higher rates than other sportfish that rely more heavily on forage fish, which should provide better angling opportunities in terms of catch rates and the number of successful anglers. The use of higher stocking rates will need to be studied in further detail to determine what levels are appropriate for Maine waters.

Study results are encouraging and potentially support the continuation of rainbow trout stocking in select Maine waters, particularly on marginal waters where native salmonid species are unable to provide satisfactory angling, and where nonnative salmonids (i.e. brown trout) provide low returns.

Experimental statewide study stockings utilize about 10,000 rainbows annually, and current plans are to continue stocking rainbows in most, but not all of these waters. Furthermore, an initial modest stocking increase is planned for southern and central Maine, including some waters that were historically stocked with rainbows (i.e. Ell Pond-Wells, Worthley Pond-Peru), as well as some new proposed stockings. All "new" stocking proposals will undergo an internal and public review process before any management and stocking changes are authorized. This review process ensures adherence to established Department policies and ensures proposals are biologically sound. The following new waters received preliminary approval: Norway Lake (Norway), Forrest Lake (Peru), Little Ossipee Lake (Waterboro), and Stanley Pond (Hiram). Current plans are

to phase in stocking on these waters over the next several years.

Scott and Crossman (Fishes of Canada) state, "The rainbow has been one of the more successful, more appreciated, and less potentially dangerous of the many attempts to introduce a fish to areas beyond its natural range." Despite the proven benefits of rainbows, the Department needs to consider the risks and implications involved with introducing a non-native trout species into Maine waters. Particularly, when evidence suggests rainbow trout likely have negative interactions with native salmonids like brook trout and Atlantic salmon.

Rainbow trout will presumably only create significant, long-term impacts to native species if they establish self-sustaining populations, or if they are continually stocked on top of existing wild salmonid populations. Although historical



4-lb Upper Range Pond Rainbow

stockings in Maine suggest establishment is unlikely on most waters, it has occurred on a few larger river systems. The Department will need to take precautions to minimize risks of rainbow interactions with wild salmonids and to reduce potential for the

establishment of self-sustaining populations. A critical next step in this process will be the development of a sound stocking policy for rainbows.

Pond Reclamation Update

The Department of Environmental Protection issued us a permit to reclaim Big Speck Pond in Norway. This summer we experimented with some "new" partial drawdown techniques, which reduces the volume of water to treat and creates additional storage capacity to minimize down stream impacts to nontarget species and/or habitats. Although our modeling suggested we could have safely performed the project, we opted to postpone it due to the unusually unpredictable and heavy rainfall we experienced for most of the year. If the weather cooperates, we'll give it a shot again in 2007.

Summer 2006 Netting on Brown Trout Lakes & Ponds

Regional staff has been systematically sampling all of our brown trout waters to assess survival and size quality as part of an ongoing effort to identify waters where brown trout are/are not meeting size performance standards identified in the statewide brown trout plan. This season we sampled 5 additional brown trout waters and the results are presented below (Table 2). Despite considerable effort, our sample sizes are quite small, which is not unusual for brown trout sampling.



Brown Trout, Long Pond (Parsonfield)

All of the waters exceeded the average size quality objective of 15 inches, and only 2 waters failed to meet the average weight criteria of 1.5 pounds established in the brown trout species plan. Most waters sampled produced at least 1 or more quality-sized browns, as specified in the species plan ($\geq 18\text{-}20''$).

Table 2. Summary of 2006 Brown Trout Sampling.

| Waters Sampled | N | Length (in) | Weight (lbs) | K-Factor |
|------------------------|----|-------------|--------------|----------|
| Horne P - Limington | 6 | 15.6 | 1.4 | 1.03 |
| Horseshoe P - Lovewell | 9 | 18.1 | 2.7 | 1.18 |
| Hutchinson P - Albany | 10 | 17.4 | 1.9 | 1.03 |
| Long P - Parsonfield | 7 | 19.3 | 3.3 | 1.26 |
| Lovewell P - Lovell | 12 | 15.2 | 1.4 | 0.99 |
| Woods P - Bridgton | 3 | 16.2 | 1.7 | 1.05 |
| All | 47 | 17.0 | 2.0 | 1.08 |

We have not had the opportunity to analyze scale samples to determine fish age, but most waters appeared to support several age classes. However, similar to last year we again noticed a lack of fish in the younger age classes, suggesting a potential survival issue that we hope to investigate in the near future.

In fact, this season we have initiated a split fall stocking on several regional waters to determine if time of stocking (Oct. vs. Dec.) may be impacting survival. Each stocking received a different identifying fin clip to enable a future determination of when the fish were stocked. Study waters include Sabbathday Lake (New Gloucester), Crystal Lake (Gray), and Middle/Upper Range Ponds (Poland). A high percentage of fall stocked browns attempt to spawn shortly after stocking in October, which may be contributing to their poor survival (i.e. post spawning mortality, vulnerability to predation while spawning in small streams). The idea is to stock them after the urge to spawn has occurred, which may increase survival during their first year at large.

Public Access

Regionally speaking, we have a number of projects at various stages of completion, but no new facilities have been developed this year in Southern Maine. The absence of staff exclusively dedicated to public access acquisition and development will continue to limit the rate at which new water access facilities can be developed. Given this financial limitation, we have increasingly focused on private landowners, who provide the vast majority of access to our public waterways. In previous newsletters, we talked about a new regional access sign developed for private, traditional access sites (December 2005). This effort is intended to cultivate a working relationship with private landowners and work towards keeping these critical access opportunities open to public use. So far we have contacted 20 landowners with excellent success. All but 2 have given us permission to post the new signage and plan to continue allowing recreational access to public waters across their private lands. Of the two that weren't interested, both landowners still intend to allow access. Several of the landowners were very enthusiastic about the signs and expressed their gratitude for the effort. Based on our current results, we will continue to work on this landowner relations program.

Thompson Lake (Oxford)

Despite reports of excellent angling during the open water season, our hydroacoustics survey in September was our first look at some hard data that suggested a potential downturn in the lakes salmon fishery. Overall smelt abundance was substantially lower than previous years, and there appeared to be a lack of young-of-the-year smelt, which are very important for salmon growth. Our subsequent annual fall trap netting on Thompson confirmed the results of the smelt survey; salmon growth and condition had noticeably declined from previous years. Although the fish are what we would call a typical or average sized salmon, they are quite a bit smaller than what Thompson has produced in more recent years (Table 3). We haven't

Table 3. Mean Length, Weight, Condition, and LLS/Net Hr for Landlocked Salmon Netted at Thompson Lake, 2001-2006.

| Mean | Year | | | | | |
|---------------|------|------|------|------|------|------|
| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
| Length (in) | 18.7 | 20.4 | 19.0 | 19.6 | 20.5 | 18.6 |
| Weight (lbs) | 2.6 | 3.3 | 2.6 | 2.9 | 3.4 | 2.2 |
| Condition (K) | 1.08 | 1.06 | 1.04 | 1.04 | 1.06 | 0.91 |

made any definite decisions at this point, but we will likely reduce the number of salmon stocked next spring to ease predation pressures on the smelt population until they rebound. Anglers can expect size quality to be down next spring, but with fewer natural smelt to feed on the salmon may be more aggressive towards lures, flies, and sewed bait.

Trickey Pond (Naples)....

We spent several weeks this past fall trapnetting Trickey Pond (Naples) in an effort to evaluate age and growth of stocked landlocked salmon. Our efforts resulted in the capture of 27 two-year-old salmon averaging 22 inches long, 4.15 pounds in weight, and boasting a condition factor of 1.07! One 3-year-old male was also captured in our nets, a 7.75 lb beauty (photo)!



To put these numbers in perspective, Trickey Pond grows a 6 to 8 inch stocked salmon to a four-pound bruiser in about 17 months! Given the chance, these fish can continue to grow to nearly eight pounds in another year.

While Trickey Pond grows some trophy landlocks, winter creel census results from 2004 indicate an average catch rate of just 0.002 legal salmon per hour of angling. That translates to 500 hours of angling per salmon! The low catch rates are likely due to a combination of low numbers of salmon stocked (100 per year), and a moderately high rate of harvest. With plenty of competition from smallmouth bass and other fish present, a low stocking rate ensures excellent growth and an opportunity for trophy salmon on this small southern Maine pond.

Increased Fall Stocking

Approximately 353 brood brook trout (2 ½ lbs), 410 brood landlocked salmon (2-3 lbs), and 460 brood brown

trout (3 lbs) were retired from Maine's hatchery system and stocked in southern Maine waters. These large fish are always well received by anglers. In addition, anglers that participate in the fall and winter fisheries should experience elevated catches of 12 to 14 inch "fall yearling" brook trout. Our fall yearling stocking program has expanded from a program of just 2000 fish in 2001 to about 9,000 fish in 2006. Most waters that received fall yearling brook trout in the past were stocked in 2006 at higher rates. In addition, some new waters were also stocked to create some additional winter brook trout fishing opportunities, including Parker Pond (Casco), Moose Pond (Acton), Horne Pond (Limington), Round Pond (Lyman – open to youth only during the winter), Wilson Lake (Acton), Thomas Pond (Casco), Hutchinson Pond (Albany), and South Pond (Greenwood). Significant additional increases in this popular fall stocking program are planned for the future, made possible by the renovation of the Emden State Hatchery using funds provided by a bond referendum several years ago. Recent past stocking information is available on the Department's web site (www.mefishwildlife.com).

Sebago Lake Update

Sebago's salmon and togue anglers were surveyed throughout the 2006 open water fishing season. The survey indicated good fishing for both salmon and togue. Angler catch rates for togue have remained relatively high since 1998, but this year anglers reported noticeable increases in togue size and condition. Several die-hard togue anglers also reported catching more fish in excess of 23 inches long, and these fish were exceptionally "fat". Salmon catches have remained relatively steady over the last 5 years, but significant overall increases in size and condition have increased angler interest. Salmon in the 4 to 6 pound size range were common in 2006, with the largest reported salmon weighing 7 pounds. Not surprisingly, opportunities to catch larger togue and salmon resulted in increased fishing effort, which was estimated at about 24,000 angler trips. This represents a 37% increase in angler use since 2002. An apparent decline in the overall condition (plumpness) of the salmon from last year was observed, even though our 2006 annual smelt survey indicated the smelt population has increased again for the 6th consecutive year. In spite of this apparent change in salmon plumpness, we received positive reports from many satisfied and successful salmon anglers. Although we remain encouraged by the overall positive changes in the quality of the coldwater fisheries in Maine's second largest lake, the dominating presence of lake trout will likely always challenge efforts to manage for an abundance of quality sized salmon.

Region A's Noteworthy Fish List

Below is a list of just a few trophy fish caught in Region A waters during the past winter fishing season.

| Angler's Name | Weight and Fish | Location |
|--------------------------|---------------------------|--------------|
| Donna Bernat | 2.3 lb White Perch | Sebago Lake |
| Whitey White | 6.75 lb Landlocked Salmon | Sebago Lake |
| Joe and Rick Bissonnette | 37.5 inch Lake Trout | Sebago Lake |
| Dave McCormack | 6 lb Landlocked Salmon | Peabody Pond |
| Donald Manson | 6.2 lb Landlocked Salmon | Trickey Pond |
| James Gaipeau II | 5.87 lb Landlocked Salmon | Sebago Lake |

